RESEARCH PROGRESS REPORT

Program: **VDACS – Specialty Agriculture Research Grant – FY06**

Project Title: **Adding Value to Woodlands with American Ginseng**

Project Leader: **Andy Hankins**
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Introduction

There are over 12 million acres of privately-owned woodlands in Virginia. A great deal of this private land is managed under forest stewardship plans for optimal production of marketable timber. Many of these private landowners are, however, no longer very interested in wholesale marketing of timber. The single greatest trend in Virginia forestry today is increased fragmentation. In many parts of Virginia it is more common to find ten persons owning 20 acres of forest land, instead of one person owning 200 acres of forest land. These persons who own small-scale woodlots often seek information about alternative enterprises, other than timber sales, that can help them earn income from their woods. They do not especially want to have their woods cut down. Many large-scale landowners would also like to earn income from their hardwood forests while they wait 15 to 40 years for their trees to mature.

One of the best opportunities for earning income from the forest is production and marketing of American ginseng. The average price paid in the fall of 2005 for wild roots of ginseng was $350 per dried pound. That price has remained steady for the past ten years. The Virginia Department of Agriculture and Consumer Services currently has 41 ginseng dealers registered with active permits to legally buy and sell ginseng. This program is administered by the VDACS Office of Plant Protection. These 41 country dealers are located all over Virginia. Together they constitute a reliable market channel for any landowners who want to sell ginseng roots. These country dealers usually sell most of their purchased roots to brokers in California and New York who ship ginseng to buyers in Hong Kong. The Chinese place a very high value on wild roots of American ginseng from the Blue Ridge Mountains of Virginia. Our native ginseng roots have been an important ingredient in Traditional Chinese Medicine since the early 1800s.

Thanks to a $26,168 grant, from the Specialty Agriculture Research Grant Program operated by the Virginia Department of Agriculture and Consumer Services, about 160 landowners throughout Virginia have received a chance to test production of American ginseng on their privately-owned lands. These landowners are cooperating in a large research study to determine the following:

1. The yield and quality of ginseng roots grown on specific soils in specific micro-environments throughout Virginia.

2. The effectiveness of natural controls for pests of ginseng crops such as diseases, insects and rodents.
3. The effectiveness of various controls for human theft.
4. Financial costs and returns from growing and selling wild-simulated ginseng.
5. Marketing techniques that can be used to maximize income from ginseng sales.

This program is co-sponsored by the Virginia Department of Agriculture and Consumer Services and by Virginia Cooperative Extension. Agriculture Extension Agents throughout Virginia will be providing technical support to the participating growers. This project will operate from 2006 to 2016. It takes ten years for American ginseng plants to grow to maturity on the forest floor.

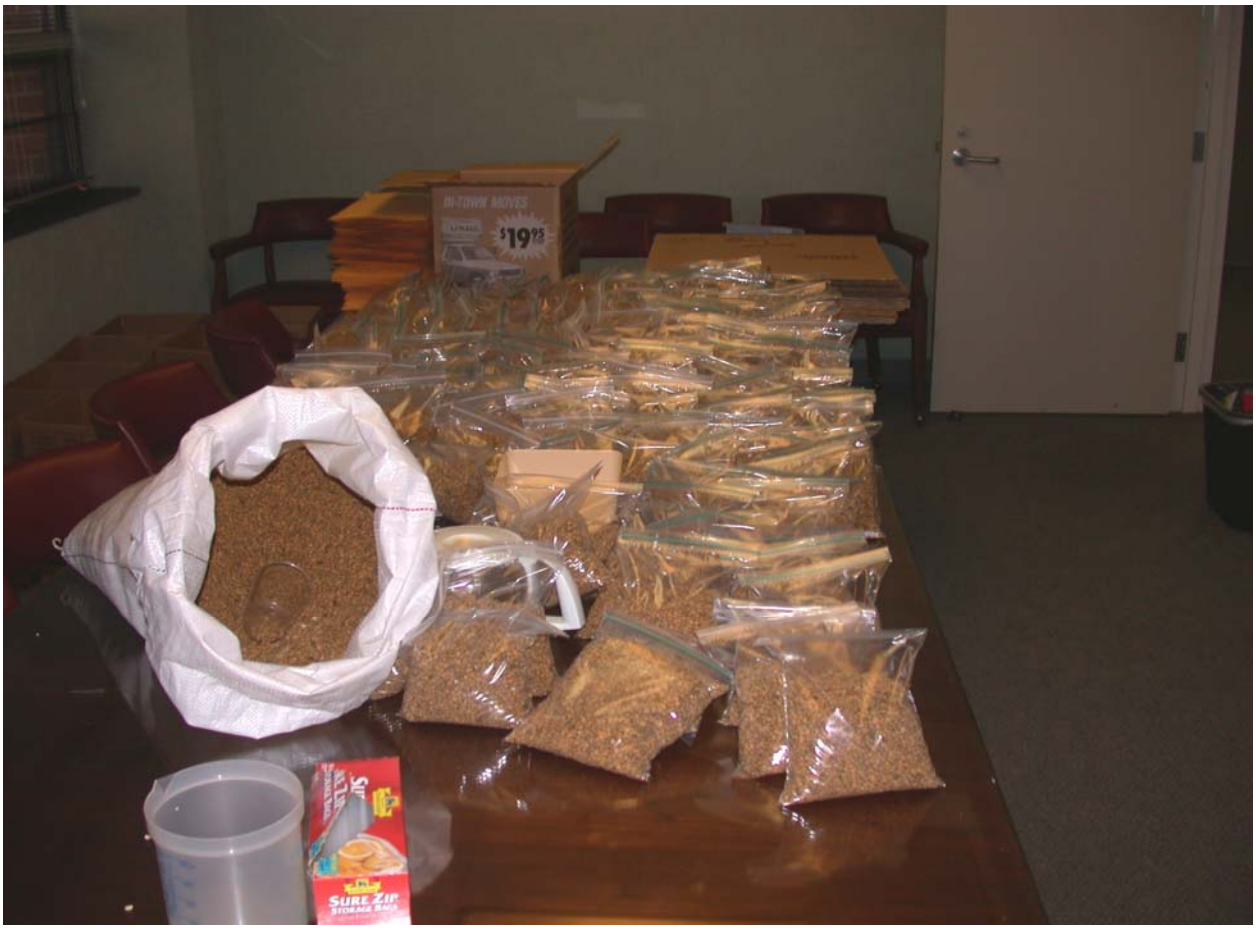
There are currently over 40 certified buyers of American Ginseng roots in Virginia.

What has been done?

When notification was received that the ginseng project proposal was approved for funding, Andy Hankins contacted Agriculture Extension Agents throughout the mountain and piedmont regions of Virginia requesting assistance. He asked these Extension Agents to identify up to ten landowners in each of their counties who would be willing to plant a pound of ginseng seeds on their privately-owned woodlands. The Extension Agents used their communication networks to identify 160 persons who would be willing to accept a pound of free ginseng seeds and plant them as participants in this research program. These landowners are located across Virginia from Loudoun County in Northern Virginia to Lee County in Southwest Virginia. Quite a few pounds of seeds went to landowners in Southside Virginia. Several of the participants are former tobacco farmers.

When the grant funds became available in October of 2005, Andy Hankins purchased 180 pounds of stratified ginseng seeds from Tuckasegee Valley Ginseng which is located near the Smoky Mountains National Park in western North Carolina. The seeds came in three large sacks. Mr. Hankins divided these sacks into 180 quart size zip lock bags which were each filled with one pound of seeds. Mr. Hankins shipped the bags of stratified ginseng seeds to the waiting participants with complete planting instructions. Each Extension Agent participating in the program also received a copy of a book entitled:

Ginseng, Goldenseal and Other Woodland Medicinals by W. Scott Persons and Jeanine Davis. These books were purchased with funds from the VDACS Specialty Agriculture Research Grant.



American ginseng seeds packed in one pound bags for shipment to Virginia landowners.


Three-prong ginseng plants are usually five to eight years old.

Each participant was asked to sign the following memorandum of understanding:

Memorandum of Agreement

In October of 2005 a research/demonstration project entitled "Adding Value to Woodlands with American Ginseng" was approved for funding by the Virginia Department of Agriculture and Consumer Services. The project was developed by:

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Any questions or concerns about this wild-simulated ginseng project should be directed to either your local Agriculture Extension Agent or to Mr. Hankins.

Each participating landowner will receive one pound of stratified ginseng seeds. Please store this seed in a refrigerator until it is planted. Each participant is required to get the seed planted as soon as possible and no later than November 30, 2005. Each participant will plant the seeds using the method described in the attached four page leaflet: "Wild-Simulated Seeding – A Better Way". The seeds should be planted on a north, east or northeast facing slope under natural shade provided by deciduous trees. The site should have at least 75% shade and well-drained soil. Each participating landowner must collect a soil sample from the planting site for testing, at the Virginia Tech Soil Test Lab and send the test results to Mr. Hankins at the above address.

Each participating landowner must be willing to allow personnel from Virginia Cooperative Extension and personnel from the Virginia Dept. of Agriculture and Consumer Services to visit the sites by appointment as needed to collect research data.

Unless there are extreme circumstances, ginseng roots grown from this seed may not be harvested until 2015, in order that complete growth measurements and mature root yield may be collected. All harvested roots belong to the participating landowners.

Each participant must provide his or her name, address and telephone number to Mr. Hankins at the address above so he can coordinate this project.

Name _____

Address_____

_____

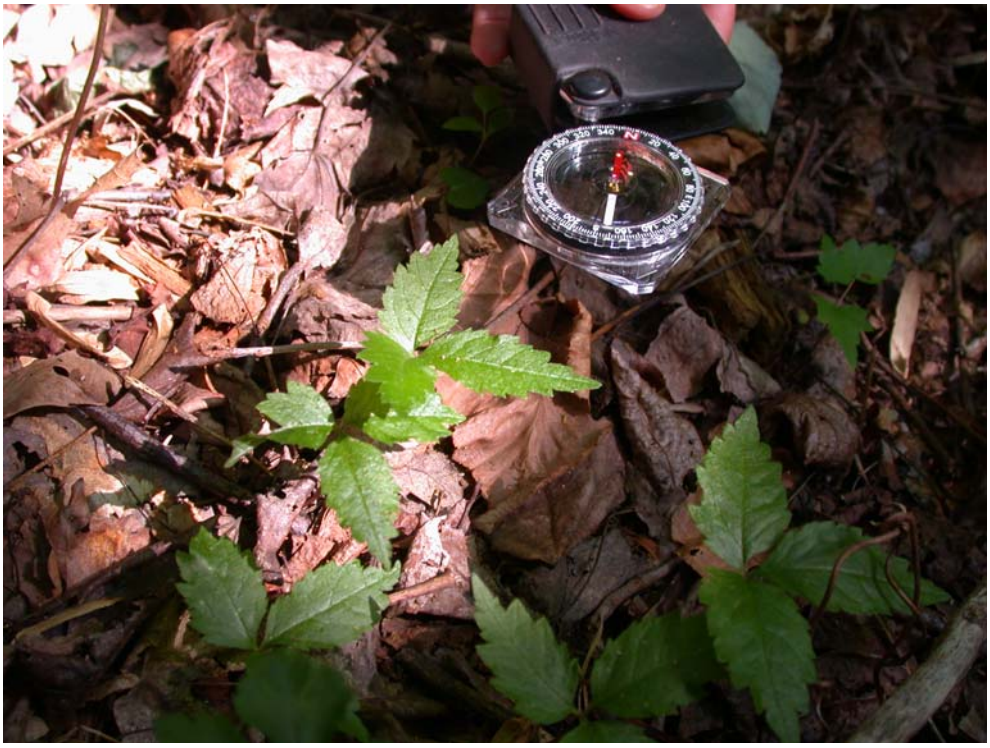
Phone_____

What has been done? (continued)

Most of the landowners have fulfilled the requirement that soil tests be taken from their ginseng planting site. A few of the landowners did not know how to have soil tested so Andy Hankins will take soil tests for them as he visits their sites in 2006 and in 2007. This soil testing provides very important baseline data. One of the greatest discoveries in recent years concerning ginseng was determining the very high requirement this botanical herb crop has for calcium. Two different research studies conducted from 1996 – 2000 confirmed that ginseng thrives best when calcium is available at a level exceeding 1800 pounds per acre. The soil tests already analyzed for the planting sites in this study show that calcium availability is quite variable across Virginia. In Highland County one soil test showed that the site contained 3682 lbs. of calcium per acre which is ideal for ginseng. Another landowner in Dickenson County had only 603 lbs. of calcium available per acre. This site may be used for production of American ginseng only if supplemental calcium is applied in the form of gypsum (calcium sulfate) at a rate of 50 lbs. per thousand square feet.

In November of 2006, 160 Virginia landowners headed into the woods with a one pound bag of ginseng seeds, a leaf rake and high hopes. The planting went very well considering that most of these persons had never planted any ginseng seeds before. To grow wild simulated ginseng, the first step is site selection. The most favorable temperature and soil moisture conditions generally are associated with north or east facing slopes with at least a 75 per cent shade canopy. That is dense shade. The best shade is provided by deep rooted, deciduous trees such as Yellow poplars and oaks. Ginseng grows best in a moist, well drained soil. That is almost a contradiction of terms but these soils do exist. Successful growth of ginseng most often occurs in sites where other herbaceous woodland plants are growing. Plants that indicate a good place to grow ginseng include Jack-in-the pulpit, bloodroot, Solomon's seal, jewel weed, galax, trillium, wild yam, hepatica, Black cohosh, wild ginger and ferns. In certain soils ginseng even grows well in association with poison ivy. Excellent soil drainage is essential. A swampy soil or a heavy clay soil must be avoided. Most of these new growers planted ginseng in very good if not perfect planting sites.

Typical woodland site used for growing ginseng.



Ginseng grows better on a North or East facing slope than a slope that faces South or West.

The growers were all asked to follow planting directions found in Virginia Cooperative Extension Publication Number 354-312 ***Producing and Marketing Wild Simulated Ginseng in Forest and Agroforestry Systems***. This publication can be found on the internet at the following url: http://www.ext.vt.edu/pubs/forestry/354-312/354-312.html

Raking leaves for mulch back over a site that was planted with ginseng seeds in November of 2005.

Summary of work yet to be completed

In the fall of 2005, 160 participating growers were supplied with ginseng seeds which they planted in their privately-owned woodlands. In the summer of 2006 visits were made to see how well the seeds germinated and what kind of an initial stand most of the growers had.

First year ginseng plants in the Spring of 2006.

Most of the work described for this American ginseng research project has not yet been done. The ginseng plants will continue to grow at each site until the year 2016. When the plants are ten years old, the roots will be harvested, dried and sold. At that time, a great deal of data will become available about the yields of ginseng roots grown in various soils and in various micro-environments across Virginia. Additional future research proposals need to be written and funded to enhance this one. This very large number of research sites with willing participants and uniform treatments can be used to investigate many aspects of American ginseng ecology. It is hoped that these sites will be made available to graduate students conducting high level research such as the interaction of micro-organisms with ginseng plants at the different locations. The interaction of whitetail deer or wild turkeys or voles with ginseng could be studied at each of these

sites. Specific safeguards against human theft could be tested at each of these locations. Any future studies that are conducted will have excellent statistical analysis simply because the sample size, at 160 sites, is very high. A financial study concerning the marketing of the mature roots by these participating growers would be of great interest.